Catabolism of mannosidase and fucosidase in cholesteatoma

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ABSTRACT

INTRODUCTION

The study aimed to determine the level of glycoconjugates catabolism by marking α-mannosidase (MAN) and α-fucosidase (FUC) activity in cholesteatoma and serum.

MATERIALS AND METHODS

The study included acquired cholesteatomas (n=25) and normal skin specimens (n=25) taken from adult patients operated due to middle ear cholesteatoma and healthy control group (mean age 50 years) and the statistical significance. Statistically significant value was p<0,05. The results of the study were also analyzed with the use of Pearson’s coefficient (r).

RESULTS

The mean concentration of MAN activity in cholesteatoma (Chol) was 8.311 pKat / mL of the supernatant and was significantly higher (p = 0.00) in comparison with the concentration of MAN activity in control tissue (C) 2.6210 pKat/mL of the supernatant. The mean concentration of FUC activity in cholesteatoma (Chol) was 10.032 pKat/mL of the supernatant and was significantly higher (p = 0.000041) in comparison with the concentration of activity in the FUC control tissue (C) 2.7231 pKat/mL of the supernatant.

The correlation between the two variables was performed, where X- meant the concentration of MAN activity in cholesteatoma and Y- the concentration of MAN activity in normal retroauricular skin. Pearson coefficient was r = 0.263 (Fig.2).

The correlation of FUC activity in cholesteatoma vs. serum of patients with cholesteatoma (Chol) was 0.0322 pKat/mL of the supernatant and was significantly higher (p = 0.000041) in comparison with the concentration of activity in the FUC control tissue (C) 2.7231 pKat/mL of the supernatant.

The correlation of two variables was performed, where X- meant the concentration of MAN activity in cholesteatoma and Y- the concentration of FUC activity in normal retroauricular skin. Pearson coefficient was r = 0.218 (Fig.3).

The correlation between the two variables was performed, where X- meant the concentration of MAN activity in the blood serum of healthy volunteers, and Y – the concentration of FUC activity in the serum of patients with cholesteatoma. The Pearson coefficient was r = 0.1735 which shows a negative correlation, i.e. an increase in the average MAN activity in serum of patients with middle ear cholesteatoma vs. serum of control (negative correlation r=-0.1735).

Concentration of α-mannosidase activity (MAN) in middle ear cholesteatoma vs. serum of control (weak correlation r=0.26321).

Concentration of α-fucosidase activity (FUC) in middle ear cholesteatoma vs. serum of control (negative correlation r=-0.0998).

REFERENCES


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Figure 1. Concentration of α-mannosidase activity (MAN) in middle ear cholesteatoma vs. serum of control (weak correlation r=0.263).

Figure 2. Pearson’s correlation rank of MAN in middle ear cholesteatoma vs. control tissue (weak correlation r=0.218).

Figure 3. Pearson’s correlation rank of MAN in middle ear cholesteatoma vs. serum of control (negative correlation r=-0.099).

Figure 4. Pearson’s correlation rank of FUC in middle ear cholesteatoma vs. control tissue (weak correlation r=0.263).

Figure 5. Pearson’s correlation rank of FUC in middle ear cholesteatoma vs. serum of control (negative correlation r=-0.099).